

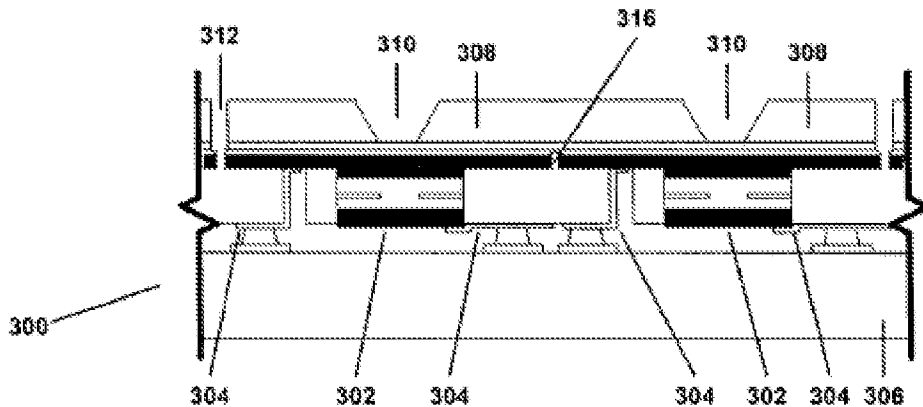
REMARKS/ARGUMENTS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and the following reasons. By way of this Amendment and Reply, independent Claims 1, 13, 14, 26, 33, 42, and 52 have been amended for clarification purposes. No new matter has been added by way of these amendments. Claims 35-41 were previously canceled. Claims 1-34 and 42-61 are currently pending in this application.

I. Claim Rejection Under 35 U.S.C. § 112

In Section 2 of the final Office Action, Claims 1-34 and 42-61 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. By way of this Amendment and Reply, all the independent Claims 1, 13, 14, 26, 33, 42, and 52 have been amended. To the extent that the rejection may still apply to the amended claims, this rejection is respectfully traversed.

Specifically, the Examiner asserted that “the specification fails to describe a grouping trench that extends from a side opposite the first side.” Applicant respectfully disagrees. Referring to, e.g., Fig. 3 of the present application, a portion of which is reproduced below, at least in the embodiment shown, the grouping trenches 312 extend from a second side of the common substrate 308 opposite the first side of the common substrate 308, wherein the first side has devices 302 formed thereon. See, also, Fig. 13 and its associated text of U.S. Patent No. 6,620,642, which was incorporated by reference in the present application. Although no claim amendments are believed to be necessary, independent Claims 1, 13, 14, 26, 33, 42, and 52 have been amended to recite that a grouping trench “extends from a second side of the common substrate opposite the first side” for clarification purposes and to advance prosecution on the merits.



In view of the above, the specification of the present application, including the incorporated references, clearly describes all of the claimed features. Accordingly, Claims 1-34 and 42-61 comply with the written description requirement, and Applicant respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, first paragraph.

II. Claim Rejections Under 35 U.S.C. § 103(a)

In Section 4 of the final Office Action, Claims 1-34 and 42-61 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,763,157 to Williams, et al. (hereinafter “Williams ‘157”) in view of U.S. Patent No. 6,614,949 to Williams et al. (hereinafter “Williams ‘949”). In the Advisory Action, it was stated that “the examiner maintains that the cited prior art meets the limitations of the claims when give[n] the broadest reasonable interpretation.” For at least the following reasons, the rejection is respectfully traversed.

As Applicant has previously noted, Williams ‘157 was filed on June 4, 2002, after the filing date (June 29, 2001) of the present application. Accordingly, Williams ‘157 may not be used as prior art against the claims of the present application. To the extent that the Examiner believes that the elements relied upon in Williams ‘157 find support in its parent application (U.S. Patent No. 6,398,425, of which Williams ‘157 is a continuation-in-part), Applicant requests that the Examiner clearly articulates the basis for this position, and further provides the following remarks.

Independent Claim 1 recites, among other elements, “at least two optical devices in a group are of a common device type formed on a first side of a common substrate,” where “the group is separated from other groups by at least one grouping trench, and wherein the grouping trench extends from a second side of the common substrate opposite the first side of the common substrate.” Independent Claims 13, 14, 26, 33, 42, and 52 each recite a similar combination of elements.

In contrast, Williams ‘157 and Williams ‘949, whether considered separately or in a proper combination, fail to disclose, teach, or suggest at least this combination of elements.

The Examiner has conceded that Williams ‘157 fails to disclose, teach, or suggest the above-mentioned combination of elements. On page 12 of the final Office Action, in response to Applicant’s arguments filed April 3, 2009, the Examiner referred to Figs. 5 and 6 of Williams ‘949, and asserted that “the grouping trenches formed by the etched cavities of epoxy hardener material clearly extend from a side opposite the first side of the common substrate, i.e., the top layer of epoxy hardener material 72 in Figure 6, towards the first side of the common substrate.” Applicant respectfully disagrees.

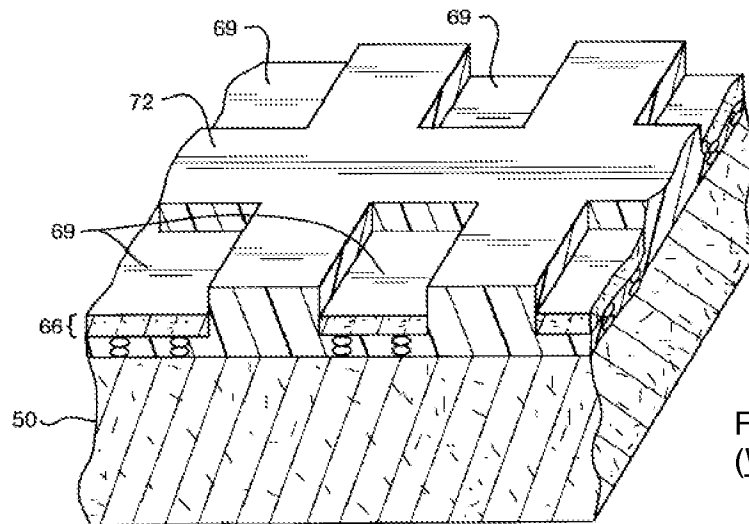


FIG. 6
(Williams ‘949)

Contrary to the Examiner's assertions, the "substrate 50" is not the "common substrate" for the devices. Rather, as more clearly shown in Figs. 4 and 5 of Williams '949 (reproduced below), the element 50 is the "ASIC substrate" to which the optical device array chip 60 is flip-chip bonded. As shown in Fig. 4, the electrical layer 66 is on the front (first) side of the Gallium Arsenide substrate 64, 62. Thus, the purported grouping trench extends from the first side of the substrate into the substrate.

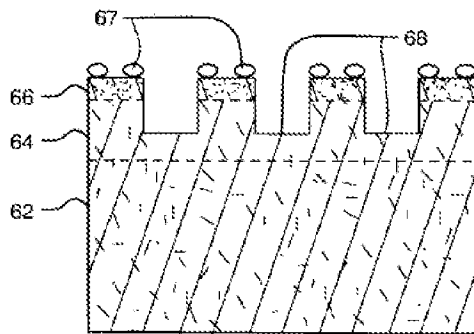


FIG. 4

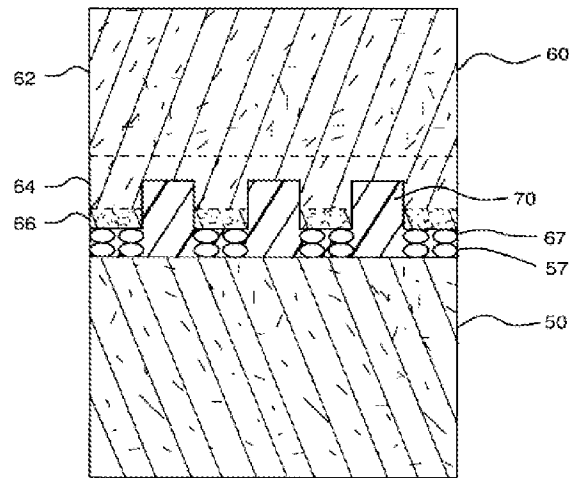


FIG. 5

The Examiner may have interpreted the previously-presented claim language of the present application as "from a side (of a different layer such as the epoxy hardener material) opposite of the first side of the common substrate." However, the claim language should be interpreted as "from a side (of the common substrate) opposite the first side of the common substrate" based on the grammatical structure of the sentence. To help advance the examination of the present application, Applicant has amended all of the independent claims to expressly recite "from a second side of the common substrate opposite the first side of the common substrate."

Moreover, because "the group (of devices) is separated from other groups by at least one grouping trench," it is clear that the claim language describes a grouping trench at least partially in the common substrate. In contrast, the purported grouping trenches 69 of Williams '949 do not extend into the purported substrate 50 at all.

Moreover, Applicant respectfully submits that the purported grouping trenches 69 are not the same as the claimed “grouping trenches” at all. For example, col. 5, lines 27-39 of Williams ‘949 describes (with emphasis added as indicated by underlining):

FIG. 6 is a perspective cutaway cross section view of a small area of the completed product by process of the second preferred method embodiment, with the standoff grid 72 exposed after lapping and etching of the Gallium Arsenide layers 62 and 64 down to the optical surface of electrical layer 66. As is clearly evident in FIG. 6, for a grid pattern that isolates each of the optical devices of array chip 60, for example, when it is etched deeper than electrical layer 66 itself, it results in the literal dissection of the array of 35 electrical layer 66 into individual, free-standing electrooptical devices 69, each fully isolated from the other and electrically connected only to the ASIC substrate 50 through respective bump contact sets 57/67.

From the above passage, it is clear that each of the electrooptical devices 69 is individually isolated from the other by the purported “trench.” This is clearly in contrast to the “grouping trench” as claimed, which separates groups of device where at least one of the groups comprises “at least two optical devices.”

Thus, Williams ‘949 fails to disclose, teach, or suggest an optical module that includes “at least two optical devices . . . formed on a first side of a common substrate” and a “grouping trench” that “extends from a side opposite the first side of the common substrate” as recited in independent Claim 1, or similar elements recited in independent Claims 13, 14, 26, 33, 42, and 52.

Applicant also notes that there is no reason, motivation, or suggestion to combine Williams ‘157 and Williams ‘949. If Williams ‘157 were combined with other references or modified to have grouped devices, the very purpose of Williams ‘157, that is, accurately aligning of the connector to the optical planar array, would be defeated. Rather than being able to cycle through the devices “one at a time” as described in e.g., col. 3, lines 3-7 of Williams ‘157, to

establish a “mapping” to “precisely locate the illumination area” (which as known in the art prefers a higher resolution as dictated by the fine pitch of individual devices), the resulting modified system would only have coarse alignment defined by groups of devices, instead of fine alignment defined individual devices. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984).

Independent Claims 1, 13, 14, 26, 33, 42, and 52 and their respectively associated dependent claims are patentable over Williams ‘157 and Williams ‘949 for at least the reasons set forth above. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 1-34 and 42-61.

* * *

It is submitted that each outstanding objection and rejection to the Application has been overcome, and that the Application is in a condition for allowance. Applicant respectfully requests consideration and allowance of all pending claims.

It should also be noted that although arguments have been presented with respect to certain claims herein, the recited subject matter as well as various other subject matter and/or combinations of subject matter may be patentable for other reasons. Further, the failure to address any statement by the Examiner herein should not be interpreted as acquiescence or agreement with such statement. Applicant expressly reserves the right to set forth additional and/or alternative reasons for patentability and/or allowance with the present Application or in any other future proceeding, and to rebut any statement presented by the Examiner in this or other papers during prosecution of the present Application.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present Application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this Application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extension of time is needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extension fee to Deposit Account No. 19-0741.

Respectfully submitted,

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